

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
8 December 2005 (08.12.2005)

PCT

(10) International Publication Number
WO 2005/117079 A1

(51) International Patent Classification⁷: **H01L 21/208**, C01B 33/02, C30B 19/10, 29/06, H01L 31/04

1468501 (JP). NAKAGAWA, Katsumi [JP/JP]; c/o CANON KABUSHIKI KAISHA, 3-30-2, Shimomaruko, Ohta-ku, Tokyo, 1468501 (JP).

(21) International Application Number:

PCT/JP2005/009305

(74) Agents: OKABE, Masao et al.; No.602, Fiji Building, 2-3, Marunouchi 3-chome, Chiyoda-ku, Tokyo 100-0005 (JP).

(22) International Filing Date: 17 May 2005 (17.05.2005)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

English

(26) Publication Language: English

(30) Priority Data:

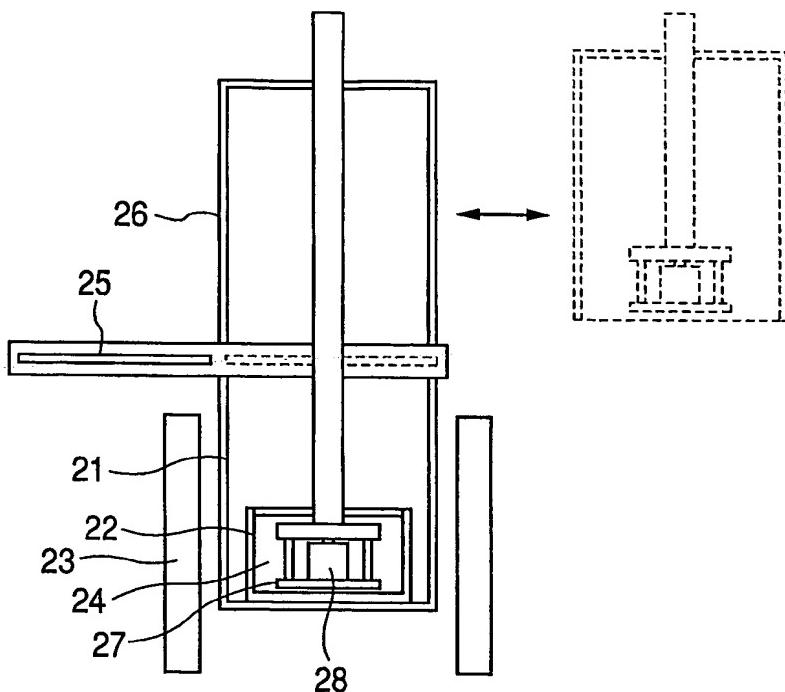
2004-156968 27 May 2004 (27.05.2004) JP

(71) Applicant (for all designated States except US): CANON KABUSHIKI KAISHA [JP/JP]; 3-30-2, Shimomaruko, Ohta-ku, Tokyo, 1468501 (JP).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,

[Continued on next page]

(54) Title: SILICON LAYER PRODUCTION METHOD AND SOLAR CELL PRODUCTION METHOD



(57) Abstract: A solar cell is produced by dipping a multicrystalline silicon substrate 28 in a solution 24 containing silicon, growing a silicon layer on the substrate 28 while decreasing with time the temperature drop rate of the solution during the dipping of the substrate in the solution, and forming a pn junction in the silicon layer. Thereby, there is provided a silicon layer production method that can form a thick layer while restraining the degree of roughness, whereby a low-cost, multicrystalline-silicon solar cell production method is provided that realizes both a large current and a high FF.



SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*